United States Department of Agriculture
Grain Inspection, Packers and Stockyards Administration
Federal Grain Inspection Service

Program Notice

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NEAR INFRARED TRANSMITTANCE WHEAT PROTEIN UPDATES AND ADJUSTMENTS

1. SUMMARY

Beginning May 1, 1999, the Federal Grain Inspection Service (FGIS) will implement updated official Hard Red Winter Wheat (HRW) protein and Hard Red Spring Wheat (HRS) protein calibrations for official near-infrared transmittance (NIRT) instruments. FGIS will also adjust the Hard White wheat (HDWH), Soft Red Winter wheat (SRW), and Soft White Wheat (SWH) protein calibrations by issuing new standard slopes.

2. BACKGROUND

FGIS performs annual reviews of wheat protein calibrations to measure the performance of NIRT instruments compared to the standard reference method, Combustion Nitrogen Analyzer (CNA). The periodic update of calibrations provides the grain industry with the best possible information from which to determine end-product yield and quality of grain.

Beginning June 1, 1998, FGIS implemented a new standardization procedure that eliminated the process of individually slope adjusting field instruments. This new standardization procedure, known as the “pathlength method” greatly reduced the labor requirements of official personnel when implementing new wheat protein calibrations to align the NIRT instruments with the CNA.

FGIS recently completed a review of the HDWH, SRW, SWH, HRW, and HRS calibrations for the NIRT instruments. Based on the results of the review, FGIS determined that calibration updates are needed at this time for HRW and HRS. The updated calibrations incorporate samples from the 1994 through 1998 harvests of HRW and HRS. The inclusion of these samples will maintain a reliable and robust calibration for official HRW and HRS protein measurements. The updates also incorporate new calibration techniques that better support field standardization procedures.

FGIS also concluded that calibration updates for HDWH, SRW, and SWH are not warranted at this time. To more closely align the NIRT predictions of protein in HDWH, SRW, and SWH to the CNA, FGIS will make an adjustment for the HDWH, SRW, and SWH classes of wheat (issue a new standard slope setting).

3. IMPLEMENTATION

FGIS will issue new data disks containing the HRW and HRS protein calibration updates to all testing locations. Additionally, FGIS will provide new baseline values for use with the existing Standard Reference Samples and the standard slope settings for HDWH, HRW, HRS, SRW, and SWH.

4. ANTICIPATED EFFECT

The effect of the calibration updates and adjustments will be to more closely align the official NIRT protein measurements with the CNA reference method, based on a system-wide average. The specific effects of the calibration changes and new standard slopes will vary from sample to sample. Some individual samples of HRW and HRS may predict protein different from the previous calibrations, which is normal for calibration updates. Some individual samples at the upper and lower protein ranges may show a greater change in protein content from the previous standard slope setting of HDWH, SRW, and SWH, which is normal for a change in the standard slope setting.

5. QUESTIONS

Direct any question to the Standards and Procedures Branch at (202) 720-0252.

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